

Appeal No. 2015-1280

---

---

**United States Court of Appeals**

*for the*

**Federal Circuit**

---

AGILENT TECHNOLOGIES, INC.,

*Appellant,*

— v. —

WATERS TECHNOLOGIES CORPORATION,

*Appellee.*

---

---

APPEAL FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE,  
PATENT TRIAL AND APPEAL BOARD IN NO. 95/001,947

---

---

**BRIEF OF APPELLEE**

ERIK PAUL BELT  
DEBORAH M. VERNON  
KIA LYNN FREEMAN  
MCCARTER & ENGLISH, LLP  
265 Franklin Street  
Boston, Massachusetts 02110  
(617) 449-6500

JULY 9, 2015

*Attorneys for Appellee*

---

---

## **CERTIFICATE OF INTEREST**

Counsel for appellee certifies the following:

**1. The full name of every party or amicus represented by me is:**

Waters Technologies Corporation

**2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:**

N/A

**3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:**

Waters Corporation

**4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:**

McCarter & English LLP

Erik Paul Belt, Partner; Deborah M. Vernon, Partner; Kia Lynn Freeman, Partner; and Danielle L. Herritt, Partner.

/s/ Erik Paul Belt  
**ERIK PAUL BELT**

<b>TABLE OF CONTENTS</b>	<b><u>Page</u></b>
CERTIFICATE OF INTEREST .....	i
TABLE OF CONTENTS.....	ii
TABLE OF AUTHORITIES .....	iv
STATEMENT OF RELATED CASES.....	viii
JURISDICTION .....	1
STATEMENT OF THE ISSUES .....	1
STATEMENT OF THE CASE .....	2
I. PROCEDURAL HISTORY .....	2
A. Agilent Crashes the Party.....	2
B. Agilent’s Arguments Regarding Claims 12 and 13 Were Waived.....	4
II. THE BACKGROUND AND TEACHINGS OF THE ‘609 PATENT.....	8
A. The Field of Art: Supercritical Fluid Chromatography.....	8
B. The ‘609 Patent Solves a Problem Unique to SFC: Pumping Compressible Fluids .....	10
C. “Control” Means to Adjust or Regulate.....	14
D. Azimov Does Not Control Pressure Drops.....	18
E. Azimov and Shoji Are Unlike the ‘609 Patent and Unlike Each Other .....	19
SUMMARY OF ARGUMENT .....	24
A. This Court Lacks Jurisdiction Because Neither the Patent Owner Nor Third-Party Requester Appealed and Agilent Is Not, and Did Not Become, the Third-Party Requester .....	24

B.	The Board Correctly Construed “Control” .....	25
C.	Agilent’s Proposed Obviousness Rejection of Claims 12 and 13 Was Never Made In the Reexamination and Thus Was Waived .....	26
ARGUMENT.....		28
I.	STANDARD OF REVIEW .....	28
II.	THIS COURT LACKS JURISDICTION OVER AGILENT’S APPEAL ...	28
A.	Agilent Does Not Meet the Statutory Definition of a Third-Party Requester .....	30
B.	Agilent Does Not Become the Third-Party Requester Simply by Being Aurora’s Privy .....	31
C.	Agilent’s Alleged Participation Below Does Not Entitle It to Appeal the Board’s Decision.....	33
D.	Agilent Did Not Buy a Right to Appeal when It Bought Assets from Aurora.....	36
III.	“CONTROL” MUST BE READ IN CONTEXT .....	39
IV.	THE BOARD CORRECTLY CONFIRMED CLAIMS 12 AND 13.....	45
A.	The Board Did Not Abuse Its Discretion in Declining to Enter New Grounds of Rejection Against Claims 12 and 13.....	45
B.	This Argument Could Not Have Been Presented to the Board .....	45
C.	Agilent’s Argument Is Not Properly Before this Court .....	48
D.	Claims 12 and 13 Are Not Obvious .....	49
CONCLUSION .....		54
CERTIFICATE OF SERVICE.....		55
CERTIFICATE OF COMPLIANCE .....		56

## TABLE OF AUTHORITIES

	Page(s)
<b>FEDERAL CASES</b>	
<i>Abbott Point of Care Inc. v. Epocal, Inc.</i> , 666 F.3d 1299 (Fed. Cir. 2012) .....	28
<i>In re Baxter Int’l, Inc.</i> , 678 F.3d 1357 (Fed. Cir. 2012) .....	49
<i>In re Buszard</i> , 504 F.3d 1364 (Fed. Cir. 2007) .....	40
<i>In re Chapman</i> , 595 F.3d 1330 (Fed. Cir. 2010) .....	28
<i>Cisco Sys., Inc. v. Lee</i> , 557 F. App’x 963 (Fed. Cir. 2014) .....	45
<i>CollegeNet, Inc. v. ApplyYourself, Inc.</i> , 418 F.3d 1225 (Fed. Cir. 2005) .....	40
<i>Consumer Watchdog v. Wisconsin Alumni Research Foundation</i> , 753 F.3d 1258 (Fed. Cir. 2014) .....	34, 35, 36
<i>In re Enhanced Sec. Research, LLC</i> , 739 F.3d 1347 (Fed. Cir. 2014) .....	48
<i>Honeywell Int’l, Inc. v. ITT Indus., Inc.</i> , 452 F.3d 1312 (Fed. Cir. 2006) .....	42
<i>Hyatt v. Dudas</i> , 551 F.3d 1307 (Fed. Cir. 2008) .....	46
<i>King v. Burwell</i> , No. 14-114, --- S. Ct. ---, 2015 WL 2473448 (June 25, 2015) .....	39
<i>In re Klein</i> , 647 F.3d 1343 (Fed. Cir. 2011) .....	52

<i>In re Lovin</i> , 652 F.3d 1349 (Fed. Cir. 2011) .....	48
<i>McGinley v. Franklin Sports, Inc.</i> , 262 F.3d 1339 (Fed. Cir. 2001) .....	51
<i>Microsoft Corp. v. Proxyconn, Inc.</i> , No. 2014-1542, 2015 WL 3747257 (Fed. Cir. June 16, 2015).....	39
<i>Pregis Corp. v. Kappos</i> , 700 F.3d 1348 (Fed. Cir. 2012) .....	29
<i>Q.I. Press Controls, B.V. v. Lee</i> , 752 F.3d 1371 (Fed. Cir. 2014) .....	49, 50
<i>Realsource, Inc. v. Best Buy Co.</i> , 282 F. App'x 821 (Fed. Cir. 2008) .....	42
<i>In re Suitco Surface, Inc.</i> , 603 F.3d 1255 (Fed. Cir. 2010) .....	40
<i>In re Sullivan</i> , 498 F.3d 1345 (Fed. Cir. 2007) .....	53
<i>SuperGuide Corp. v. DirecTV Enters., Inc.</i> , 358 F.3d 870 (Fed. Cir. 2004) .....	44
<i>Syntex (U.S.A.) Inc. v. U.S. Patent &amp; Trademark Office</i> , 882 F.2d 1570 (Fed. Cir. 1989) .....	33
<i>Tempo Lighting, Inc. v. Tivoli, LLC</i> , 742 F.3d 973 (Fed. Cir. 2014) .....	28
<i>U.S. v. Alexander</i> , 326 F.2d 736 (4th Cir. 1964) .....	38
<i>United States v. Hohri</i> , 482 U.S. 64 (1987) .....	37
<i>Vaillancourt v. Becton Dickinson &amp; Co.</i> , 749 F.3d 1368 (Fed. Cir. 2014) .....	29, 34, 36, 37

<i>Yates v. United States</i> , 135 S. Ct. 1074 (Feb. 25, 2015) .....	39
--	----

## **BOARD DECISIONS**

<i>Artsana USA, Inc. v. Kolcraft Enterprises, Inc.</i> , Appeal No. 2013-008706, 2013 WL 6490306 (PTAB 2013) .....	46
---	----

<i>Ex parte Frye</i> , Appeal No. 2009-006013, 2010 WL 889747 (BPAI 2010) .....	46
--	----

<i>University of Pittsburgh v. Cellerix</i> , Appeal No. 2013-008103, 2013 WL 6328581 (PTAB 2013) .....	35
--	----

<i>Synthon Pharms., Inc. v. Sanofi-Aventis U.S. LLC</i> Appeal No. 2013-000570, 2013 WL 1310673 (PTAB 2013) .....	40
--	----

## **FEDERAL STATUTES**

35 U.S.C. § 100 .....	30, 31
35 U.S.C. § 134 (1999-2001) .....	34
35 U.S.C. § 141 .....	<i>passim</i>
35 U.S.C. § 311 .....	31
35 U.S.C. § 314 .....	47
35 U.S.C. § 317 .....	32

## **RULES**

Fed. Cir. R. 27 .....	38
Fed. R. Evid. 1001-1004, 1006-1007 .....	38

## **REGULATIONS**

37 C.F.R. § 1.915 .....	47
37 C.F.R. § 1.947 .....	47
37 C.F.R. § 1.948 .....	47

37 C.F.R. § 1.951.....	47
37 C.F.R. § 41.37.....	48
37 C.F.R. § 41.67.....	46, 47, 48
37 C.F.R. § 41.68.....	46, 47
<b>CONSTITUTIONAL PROVISIONS</b>	
U.S. Const., Article I, § 1.....	36
<b>OTHER AUTHORITIES</b>	
BIOWORLD, <i>TiGenix Merges with Cellerix in \$79.7M All-Share Deal</i> , <a href="http://www.bioworld.com/content/tigenix-merges-cellerix-797m-all-share-deal">http://www.bioworld.com/content/tigenix-merges-cellerix-797m-all- share-deal</a> .....	35
Byron F. Egan, <i>Asset Acquisitions: Assuming and Avoiding Liabilities</i> , 116 PENN. ST. L. REV. 913 (2012) .....	37, 38



## STATEMENT OF RELATED CASES

This appeal is related to Federal Circuit Appeal No. 15-1281, which involves the same patent owner and stems from the same underlying litigation but involves a different patent. The patent in the co-pending appeal is directed to similar technology and shares most of the same inventors. Waters Technologies Corporation asserted both patents against Aurora SFC Systems, Inc., in the District of Delaware in 2011. That litigation was stayed pending *inter partes* reexamination of the two patents. Both appeals concern the outcomes of the two reexaminations—one favorable to Waters and one against. Waters is the appellant in No. 15-1281 and the appellee here. This Court deemed the two appeals to be “companion” cases and has assigned them to the same merits panel. *See* Case No. 15-1281 at Doc. 36.

## **JURISDICTION**

Waters Technologies Corporation disagrees with Agilent's contention that this Court has jurisdiction under 35 U.S.C. § 141. While § 141 is the right statute, Agilent is the wrong party. Section 141 permits only patent owners and third-party requesters to appeal to this Court from *inter partes* reexaminations. Agilent is neither. Neither the patent owner (Waters) nor the actual third-party requester (Aurora SFC Systems, Inc.) appealed. Thus, Agilent's notice of appeal is a nullity, and this Court lacks jurisdiction. For these reasons and those more fully developed below, this Court should dismiss the appeal.

## **STATEMENT OF THE ISSUES**

Without conceding any facts or waiving any arguments, Waters generally agrees that Agilent has correctly identified the three issues for this Court's consideration. That being said, the second issue (regarding Claims 12 and 13) should be viewed as a question of waiver: namely, whether the Board correctly declined to reject Claims 12 and 13 as obvious over Azimov, Shoji, and the Admitted Prior Art given that this combination was never argued below and thus has been waived on appeal.

## STATEMENT OF THE CASE

### I. PROCEDURAL HISTORY

#### A. Agilent Crashes the Party

On March 27, 2012, Aurora SFC Systems, Inc., requested *inter partes* reexamination of U.S. Patent No. 6,648,609 (“the ’609 patent”). In its request, Aurora identified itself, and only itself, as the real party in interest and third-party requester. A992. Agilent never requested reexamination of the ’609 patent. The USPTO granted Aurora’s request and instituted the *inter partes* reexamination on May 7, 2012. A595-97. In or about August 2012, Agilent purchased certain assets from Aurora. A1228. The transaction was neither a stock purchase nor other form of merger; after the transaction, Aurora remained a distinct, live entity. A1228. Also after the transaction, Aurora continued to be represented by its counsel, Ms. Lieberman, and, as the third-party requester, continued to submit third-party comments to the examiner. *See, e.g.*, A919-20 and A979-80.

The examiner issued the first office action in the reexamination in May 2012. *See* A578-594. Waters responded in July 2012. A1175. Aurora (not Agilent) filed third-party comments in August 2012. *See* A871, 876. After a second office action in September 2012 (A630-34), Waters filed a response in October (A921), and, in November, Aurora again (not Agilent) submitted the third-party comments. A934, A979.

On January 23, 2013, the examiner issued a right of appeal notice (“RAN”) adopting certain proposed rejections of the claims as either anticipated or obvious. A52-86. As the patent owner, Waters appealed the rejection of the claims to the Board. A663. Third-party requester Aurora—not Agilent—noticed a cross-appeal to the Board. A665-66; A712. At that point (March 8, 2013), and as far as Waters knew, Aurora remained the only other party in the reexamination. Not until a month later, on April 26, 2013 (eight months after Agilent’s asset purchase transaction and after the reexamination before the examiner had run its course), did Aurora update the “real party in interest” from Aurora to Agilent. A981. Agilent never requested to be substituted in as the third-party requester. Moreover, Aurora did not withdraw but continued to participate and be represented by its counsel in the proceedings. *See, e.g.*, A541-42, A919-20, A979-80.

The Board held oral argument on April 23, 2014. Aurora’s counsel, Ms. Lieberman, appeared as co-counsel for the third-party requester. A541-42, A557. On September 30, 2014, the Board issued a decision (a) listing Aurora as the third-party requester; (b) reversing all grounds of rejection; (c) entering a new ground of rejection against certain claims; and (d) confirming other claims. A1-5, A31.

On December 19, 2014, Agilent (not Aurora) noticed an appeal to this Court. Doc. 1. On December 30, 2014, Waters objected to Agilent’s notice of appeal. A1222-32. On March 3, 2015, Waters moved for this Court to dismiss the appeal.

*See* Doc. 25. On April 17, 2015, this Court denied the motion and “direct[ed] the parties] to address the jurisdictional argument in their briefs.” Doc. 35 at 2.

**B. Agilent’s Arguments Regarding Claims 12 and 13 Were Waived**

During the reexamination, in its response to the first office action, Waters amended the original claims and added two new claims. A1175-76, A705. More specifically, Waters cancelled Claim 4, which had depended from Claim 1, and incorporated its limitations into Claim 1. Waters also incorporated the limitations of Claim 4 into the other independent claim, Claim 9. *See* A1176. Claim 1, as amended, is reproduced at p. 14 below. Waters also added new Claims 12 and 13. A1175-76. Claim 12 recites “The system of claim 1, wherein the flow stream comprises CO<sub>2</sub>.” A1176, A705. Claim 13 recites “The system of claim 9, wherein the flow stream comprises CO<sub>2</sub>.” A1176, A705.<sup>1</sup>

In response to these amendments, Aurora proposed four obviousness attacks against Claims 12 and 13 but, importantly, did not assert that these claims were obvious over Azimov plus Shoji with or without the Admitted Prior Art (“APA”). Rather, Aurora limited its arguments to the following prior art combinations:

- (1) Chenoweth in view of the APA;
- (2) Azimov in view of the APA;

---

<sup>1</sup> The original dependent claims (2-8, 10-11) were not themselves amended, except that they now depend from amended Claims 1 and 9. All of the claims, as amended, are reproduced at A703-05.

(3) Gertenbach in view of the APA in view of Shoji; and

(4) Henszey in view of the APA in view of Shoji or Fenimore.

A874 and A917-19.

In a second round of briefing to the examiner, Aurora proposed additional obviousness grounds and abandoned others. *See* A949-50 (Claims 1, 2, and 9-13 are obvious over Azimov in view of APA); A951-52 (“Claim 1, 2, and 5-13 are Obvious over Gertenbach in View of Azimov and Müller-Kuhrt”). Again, Aurora did not argue obviousness based on Azimov in view of Shoji and the APA. Indeed, Aurora did not include Shoji at all. Nor did Aurora raise this combination at any point during proceedings before the examiner.

On January 23, 2013, the examiner issued the RAN. A52-86. The examiner adopted two obviousness rejections involving Claims 12 and 13: (1) Claims 1, 2, 9, 12, and 13 as obvious over Azimov plus the APA; and (2) Claims 1, 2, and 5-13 as obvious over Gertenbach plus Azimov and Müller-Kuhrt. A62-65. Neither rejection was based on Shoji or on Azimov plus Shoji and the APA.

On appeal to the Board, Aurora agreed that these two obviousness combinations were the *only* grounds at issue on appeal pertaining to Claims 12 and 13. A674-675; A803. In its notice of cross-appeal to the Board, Aurora asserted for the first and only time below that Claims 12 and 13 are obvious over Azimov in view of Shoji. A665-66. But Aurora failed to elaborate on this assertion in its

briefing. Indeed, the Board observed that “[t]he Requester does not explain how either Azimov or Shoji, or a combination of the two, teaches or suggests these limitations [recited in Claims 12 and 13].” A31.

Aurora filed three briefs with the Board—an opening and rebuttal brief as cross-appellant and a responsive brief as appellee. In its opening cross-appeal brief, Aurora never argued the patentability of Claims 12 and 13. *See* A710, A719.<sup>2</sup> Aurora did, however, raise Azimov plus Shoji, albeit only with respect to Claims 1 and 9. A710, A727-31. In response, Waters argued that this combination was waived. A743-45. In reply, Aurora argued for the first time anywhere that Azimov plus Shoji rendered Claims 12 and 13 obvious. A855, A868.

In response to Waters’s own appeal to the Board, Aurora argued only that “Claims 1, 2, and 9-13 are obvious over Azimov in view of the Admitted Prior Art.” A816-17. Once again, Aurora did not rely on Shoji and did not argue that Claims 12 and 13 were obvious over Azimov plus Shoji and the APA.

The Board rejected Aurora’s arguments regarding Claims 12 and 13. First, the Board did “not sustain the rejection of claims 1, 2, 9, 12 and 13 under § 103(a) as being unpatentable over Azimov and the Admitted Prior Art.” A22-23. The Board reasoned that Azimov failed to teach a system of pressure regulators and a

---

<sup>2</sup> Aurora’s first appeal brief to the Board simply refers to “Third-Party Requester” or the abbreviation “TPR.” *See* A709, 713. The brief was signed on behalf of the Third-Party Requester. A732. Aurora, of course, was the third-party requester. Thus, at that point, Agilent’s role in the appeal was unclear.

differential pressure transducer that “control” pressure drop across a restrictor. A22. The Board further concluded that the APA did not remedy this deficiency. *Id.* The Board also “decline[d] to enter *new* grounds of rejection against claims 12 and 13 . . . . The Requester does not explain how either Azimov or Shoji, or a combination of the two, teaches or suggests these limitations.” A30-31 (emphasis added). Given Aurora’s lack of argument on the combination of Azimov with Shoji and the APA, the Board never had cause to rule on whether Claims 12 and 13 are obvious over that combination. The argument that Agilent now presents to this Court regarding the obviousness of Claims 12 and 13, therefore, is new.

In the end, the Board confirmed the patentability of certain claims and entered a new ground of rejection against others. Specifically, the Board reversed the examiner as to all claims; entered a new ground of rejection against Claims 1, 2, and 9-11; and confirmed the patentability of Claims 3, 5-8, 12, and 13. A3-5; A30-32. Waters did not appeal nor seek further reexamination regarding Claims 1, 2, and 9-11. Thus, the only claims at issue now are 3, 5-8, 12, and 13. Claims 1 and 9, however, are relevant because the confirmed claims depend from them and thus incorporate their limitations. In particular, as discussed in the next section, a key issue is whether the Board correctly construed the word “control,” as that term appears in Claims 1 and 9 and thus, by extension, in the dependent claims.



## **II. THE BACKGROUND AND TEACHINGS OF THE ‘609 PATENT**

### **A. The Field of Art: Supercritical Fluid Chromatography**

The ‘609 patent is directed to systems for using an imprecise or inexpensive pump as a pressure source for precision pumping of a compressible fluid in high-pressure chromatography, particularly in supercritical fluid chromatography (“SFC”). A41 at 4:8-11; A315 at ¶ 16. By way of background, chromatography involves laboratory techniques and equipment for separating and collecting or analyzing components of a chemical sample. Chromatography has various practical applications, such as drug testing, drug development, blood testing, and other laboratory uses. A370-79.

Chromatography encompasses several different forms. In one form, liquid chromatography, the sample is injected into a solvent-containing liquid, known as the “mobile phase,” and flows through a column that is typically packed with an absorbent “solid phase” (also known as the “stationary phase”), which typically comprises porous gel or fine particles. Based on their polarities or other chemical and physical characteristics, the various components of the sample in the mobile phase separate out at different rates as they flow through the packed column. Detectors (*e.g.*, mass spectrometers) can then analyze or measure the separated components. A more efficient form of liquid chromatography (mentioned in the “Background” of the ‘609 patent, A40 at 1:27 *et seq.*) is known as high

performance liquid chromatography, or “HPLC” for short. HPLC uses pumps to meter the flow of the mobile phase through the column. HPLC can process larger sample volumes than other types of chromatography. A370-79; A392 at 1:4-51.

SFC is an even more advanced form of chromatography and “has been proven to have superior speed and resolving power compared to traditional HPLC for analytical applications.” A40 at 1:28-30; *see also* 1:30-40. SFC, however, suffers from problems not associated with HPLC or standard liquid chromatography.<sup>3</sup> The main problem is that SFC requires pumping compressible fluids (a highly compressed gas, compressible liquid, or supercritical fluid) through the system. As the ‘609 patent explains, “[p]umping compressible fluids, such as carbon dioxide (CO<sub>2</sub>), at high pressures in SFC systems while accurately controlling the flow, is more difficult than that for a liquid chromatography system.” A40 at 2:51-54. Indeed, “[a] great deal of subtlety is required to pump fluids in SFC.” *Id.* at 2:13.

---

<sup>3</sup> SFC typically uses two mobile phases, one of which contains a supercritical fluid, typically carbon dioxide (CO<sub>2</sub>). A42 at 5:31-51. A supercritical fluid is one that exists above the “critical point,” which is the pressure and temperature at which the liquid and gas phases of a substance exist in equilibrium. Above that point, the fluid has the viscosity of a gas and solubility of a liquid. This combination of properties has proven useful for certain chromatography applications. *See* A400 at 1:5-38. Such supercritical fluids, however, are highly compressible, much more so than normal liquids used in HPLC. A40 at 2:13-28. As discussed above, pumping highly compressible fluids in SFC and similar systems poses special problems that the ‘609 patent solves.

## **B. The ‘609 Patent Solves a Problem Unique to SFC: Pumping Compressible Fluids**

The particular difficulty prefaced above concerns the compressibility factor (“Z”) of the compressible fluid, such as CO<sub>2</sub>, used in the mobile phase. As Waters’s chromatography expert, Dr. Chordia, explains, changes in Z cause unwanted ripples and variation in the flow of the mobile phase, thus impairing accuracy and reproducibility of the chromatography analysis:

It was known that pumping compressible fluids such as CO<sub>2</sub> using imprecise pressure source pumps caused large oscillations in the flow, which is damaging to SFC. This is because, due to the large and changing compressibility factor (Z) of compressible fluids, a first changing portion (x) of the pumping stroke is used to compress the fluid while a second changing portion (1-x) is used to displace the fluid, resulting in noisy baselines and irreproducibility (*e.g.*, flow oscillations having a period function related to the frequency of the pumping stroke).

A315 at ¶ 19.<sup>4</sup>

Changes in compressibility are a particular bane to SFC but do not affect, or are less noticeable in, standard liquid chromatography. A41 at 3:34-42 (“The compressibility of the pumping fluid directly effects volumetric flow rate and mass flow rate. These effects are much more noticeable when using compressible fluids such as carbon dioxide in SFC rather than fluids in liquid chromatography”).

---

<sup>4</sup> Dr. Chordia has a doctoral degree in chemical engineering from Carnegie-Mellon University and has worked in the SFC field for over 30 years. He is an inventor named on seven patents directed to SFC technology. A313-14 at ¶¶ 1-8. Dr. Chordia’s testimony is unopposed. Aurora never offered a rebuttal expert.

Compressibility changes with pressure and temperature. A40 at 2:24-25. Pumps normally used in SFC, however, contribute to pressure and temperature changes, thus changing the compressibility of the fluid and causing the unwanted ripples and variation in flow. *Id.* at 2:54-60. Accordingly, a need arose for compensating for the compressibility changes to ensure accuracy and constant, controlled flow of the mobile phase. *Id.* at 2:29-35 (“Without correct compressibility compensation, the pump either under- or over-compresses the fluid causing characteristic ripples in flow and pressure. Either under- or over-compensation results in periodic variation in both pressure and flow . . . The result is noisy baselines and irreproducibility”); A41 at 3:52-54 (“At high pressures, compressibility of solvents is very noticeable and failure to account for compressibility causes technical errors in analyses and separation in SFC”).

The so-called “reciprocating” pumps typically used in HPLC were capable of compensating for compressibility changes to some extent but had only narrow compressibility compensation ranges and could be set to only a single compensation level. As such, these pumps could not deal with the significant compressibility changes in SFC. A40 at 2:14-17. To compensate, pumps destined for use in SFC needed to dynamically compensate for compressibility changes over a larger range. *Id.* at 2:22-28; A42 at 5:39-41 (“SFC systems commonly use an SFC-grade reciprocating piston pump having dynamic compressibility

compensation”). This solution, known as dynamic compressibility compensation (“DCC”), is described in the ‘609 patent. *See* A40 at 2:61 - A41 at 3:16. But pumps with DCC capability are expensive and do not completely solve compressibility problems. A41 at 3:12-14; A42 at 5:22-30.

In the companion case involving Waters’s ‘767 patent (Case No. 15-1281), the claimed invention modifies an SFC system such that a pump with only constant compressibility compensation (“CCC”) can be used in SFC without the need for DCC. *See* Doc. 32 at 2-3 in Case No. 15-1281. The ‘609 patent, however, approaches the compressibility problem differently. In the methods of the ‘767 patent, the pump is used as a flow source. But in the ‘609 patent, the pump is used as a pressure source. When combined with the pressure regulating assembly recited in the claims, an inexpensive and imprecise pump can replace an expensive, high-grade SFC pump. A41 at 4:8-23; A42 at 5:22-26 (“The present invention provides for the replacement of an expensive SFC-grade pump for compressible fluids having dynamic compressibility compensation, with a less-expensive and imprecise pump to move a compressible fluid flow stream in a precise flow rate and pressure signal”); A43 at 7:33-47 (“By utilizing a series of pressure regulators 46, 50 with a precision orifice 48 placed after a pressure source 52 in the compressible fluid flow stream 14, a high cost SFC-grade pump can be replaced with an inexpensive, lower-grade pump . . .”).

But to work properly, the system must still account for the compressibility of the highly compressible fluid or else oscillations in flow will degrade the chromatography results. A40 at 2:26-29 (“Inadequate compensation results in errors in both the flow rate and the composition of modified fluids”); A41 at 4:3-5 (“a need exists for a system that uses a pump as a pressure source in SFC without degrading the chromatography results”).

A key to optimizing the system is to control the flow of the mobile phase (*i.e.*, the one containing the compressible fluid) and keep it as constant as possible. A40 at 1:35-38. As the ‘609 patent explains, fluctuations in the flow rate lead to errors in the chromatography analysis:

***The flow rate should be kept as constant as possible through the separation column.*** If the flow rate fluctuates, variations in the retention time of the injected sample would occur such that the areas of the chromatographic peaks produced by a detector connected to the outlet of the column would vary. Since the peak areas are representative for the concentration of the chromatographically separated sample substance, ***fluctuations in the flow rate would impair the accuracy and reproducibility of quantitative measurements.*** At high pressures, compressibility of solvents is very noticeable and failure to account for compressibility causes technical errors in analyses and separation in SFC.

A41 at 3:43-54 (emphasis added).

That’s where the claimed pressure regulating assembly comes in. The claims recite the combination of a back-pressure regulator, forward-pressure

regulator, and a differential pressure transducer to control the pressure drop (“ $\Delta P$ ”) across a restrictor (*e.g.*, an orifice). To wit:

1. (Amended) A system for using a pump as pressure source in a flow stream containing a highly compressed gas, compressible liquid, or supercritical fluid, comprising:

a restrictor for restricting flow downstream of the pump;

a forward pressure regulator located upstream of the restrictor for controlling the outlet pressure from the pump; and

a back-pressure regulator located downstream of the restrictor, and a differential pressure transducer, where the back-pressure regulator, forward-pressure regulator, and the differential pressure transducer control the pressure drop across the restrictor.

A703.

Controlling the pressure drop ( $\Delta P$ ) across the restrictor, in turn, controls the flow and keeps it constant, preventing the unwanted fluctuations that damage the chromatography results. As the patent explains, “[c]ontrolling  $\Delta P$  will control the flow of compressible fluid in the system . . . If there is a drop in  $\Delta P$  in addition to cooling across the orifice 48, the positive effects of flow control begin to degrade.”

A42 at 6:51-58.

### **C. “Control” Means to Adjust or Regulate**

The claim term “control” became a focal point of the underlying *inter partes* reexamination. Aurora argued that Azimov (A108-118) discloses a differential pressure transducer that “controls” the pressure drop across a restrictor. Waters disputed that contention, arguing that “control” connotes active, dynamic

regulation of pressure so as to maintain steady flow of the mobile phase, while Azimov teaches, in effect, a circuit breaker that shuts off the system and thus does not control pressure. *See, e.g.*, A686-690. As explained in Section D below, Azimov merely reacts to pressure without controlling it.

The Board agreed with Waters and construed “control” to mean “to adjust to a requirement” or to “regulate,” connoting active or dynamic adjustment of pressure to smooth out flow oscillations. A11-12. The Board then found that the servo-mechanism of Azimov, which Aurora argued was the “differential pressure transducer” of the ‘609 patent, did not “control” pressure but rather shut off the system, thus stopping flow rather than regulating it. A15, A18.

Contrary to Agilent’s argument, the Board was not “led astray” by a dictionary definition of “control.” *See* Brief of Appellant [Doc. 42] at 29. Rather, the Board emphasized that its “usage is consistent with that in the Specification.” A12 (citing to ‘609 patent at 4:24-42).

In fact, the specification, as well as the understanding of one of ordinary skill in the art, supports the Board’s construction. As seen above, the point of the invention is to control flow and keep it as constant as possible in the wake of compressibility changes, thus avoiding the unwanted flow oscillations that degrade chromatography results:



According to the present invention, an SFC pump is converted from a flow source into using the pump as a pressure source while continuing to control the flow rate. The preferred embodiment allows for *constant mass flow of compressible fluids* and even provides for constant mass flow in the presence of rising outlet pressure. . . . *The present invention provides precise flow by dampening out a noisy pressure signal and uneven flow* so that a pneumatic pump functions as well as an SFC-grade reciprocating pump.

A43 at 7:12-47 (emphasis added); *see also, e.g.*, A41 at 3:43-44 (“The flow rate should be kept as constant as possible through the separation column”).

Thus, the goal of the invention is not to shut off flow, as in Azimov, but rather to “*move* a compressible fluid flow stream in a *precise flow rate* and pressure signal.” A42 at 5:22-26 (emphasis added); *see also* A41 at 4:18-20 (same); A43 at 7:1-4 (“To assist in *maintaining the constant flow stream*, the pressure source 52 pumps flow at a pressure higher than any pressure required throughout the system”) (emphasis added); *id.* at 8:60-64 (“the invention may be used in any system where it is necessary to obtain *steady flow of liquid* at high pressures with *high degrees of accuracy of pressure and flow* using an imprecise pressure source”) (emphasis added). Accordingly, the claimed assembly does not prevent flow but rather “dampens the damaging effects of a low-grade pump, such as large pressure and flow oscillations caused by flow ripples and noisy pressure signals that do not meet precise SFC pumping requirements.” A42 at 5:26-30.

In keeping with the purpose of maintaining even flow to provide useful chromatography results, the specification equates control with regulation:

The invention ***regulates*** the outlet pressure from a pump using a system of pressure ***regulators*** and a restriction in the flow stream. To ***regulate*** outlet pressure directly downstream of a pump, a forward-pressure regulator (FPR) is installed in the flow line. Downstream of the forward-pressure regulator the flow is restricted with a precision orifice. . . . Downstream of the orifice is a back-pressure regulator (BPR). The series of an FPR-orifice-BPR is designed to control the pressure drop across the orifice, which dampens out oscillation from noisy pressure signals caused by large ripples in the flow leaving the pump. An additional embodiment uses a differential pressure transducer around the orifice with a servo control system to ***further regulate*** the change in pressure across the orifice . . .

A41 at 4:24-42 (emphasis added). This passage makes clear that the result of this regulation is not to shut off flow but rather to regulate the pressure drop and thus dampen oscillation and noise.

The specification always discusses control in terms of adjustment or regulation to maintain continuous flow and keep the mobile phase moving through the separation column. *See, e.g.,* A43 at 7:11-17 (“According to the present invention, an SFC pump is converted from a flow source into using the pump as a pressure source ***while continuing to control the flow rate***. The preferred embodiment allows for ***constant mass flow of compressible fluids*** and even provides for constant mass flow in the presence of rising outlet pressure”) (emphasis added). The control assembly thus adjusts pressure to allow for the constant flow. *Id.* at 7:9-11 (“a variable orifice can change  $\Delta P$  and the flow rate according to ***adjustments made by a control system***”) (emphasis added).

One of ordinary skill in the art would have read and understood the patent in this fashion—*i.e.*, that the goal is to keep the mobile phase flowing evenly and precisely. *See* A315 at ¶ 16 (the patent is directed to replacing an expensive SFC pump with an imprecise pressure source pump “while maintaining the ability to move a compressible fluid flow stream, for example CO<sub>2</sub> in SFC, with a precise flow rate and pressure signal”). As such, according to one of ordinary skill, the pressure regulators and differential pressure transducer do not act as circuit breakers to shut off the system but rather adjust the system in a controlled manner so as to maintain the pressure drop and thus ensure even flow. A316 at ¶¶ 23-25. In particular, as Dr. Chordia explains, the differential pressure transducer “applies the continuously changing  $\Delta P$  information to one or both of the pressure regulators, to *adjust* the pressure regulators and thereby maintain control over  $\Delta P$ .” A316 at ¶ 25.

#### **D. Azimov Does Not Control Pressure Drops**

As Agilent concedes, Azimov discloses a mechanism that shuts off the system, thus stopping flow to protect the system. *See* Brief of Appellant [Doc. 42] at 30, 38-39. Agilent has never argued that Azimov discloses regulation (*i.e.*, dynamic adjustment or control) to maintain pressure and flow rather than to stop it. Likewise, the Board found that Azimov teaches shutting off the system rather than regulating a constant rate of pressure and flow. A15 (citing to Azimov at 9:21-29).

More specifically, the Board found that Azimov does not “control” pressure drop across the restrictor, as recited in Claim 1 of the ‘609 patent:

Azimov’s flow switch 32 does not control the pressure drop across the restrictor as recited in claim 1. Azimov’s flow switch 32 is capable only of monitoring and shutting off a pressure drop across the flow regulation device 38. The flow switch 32 does not adjust or regulate the pressure drop either during the period when the flow is maintained. . . . There is no pressure drop to adjust or regulate during the period when the flow is shut off.

A18. Azimov itself confirms the Board’s findings. *See, e.g.*, A113 at 5:1-5 (“The servo-mechanism can then shut down the system This fail-safe feature protects both the individual components and the boiler, mixing vat, or other receiving apparatus which is supplied by the system”); A115 at 9:26-29 (“Changing the rate of flow within the system, in turn, triggers the flow switch to intercede, thereby stopping the continued functioning of the system through the intervention of the servo-mechanism”). One of ordinary skill would also read Azimov in this fashion and would thus distinguish the ‘609 patent from Azimov because Azimov fails to disclose the required control. *See* A317 at ¶¶ 32-34.

**E. Azimov and Shoji Are Unlike the ‘609 Patent and Unlike Each Other**

As discussed extensively above, the ‘609 patent relates to pumping compressible fluids, particularly in SFC and SFC-like applications. The ‘609 patent and the claims at issue must therefore be understood in the context of SFC. First, the title of the patent is “Pump as a Pressure Source for Supercritical Fluid

Chromatography Involving Pressure Regulators and a Precision Orifice.” A33. The drawings all concern schematic representations of various embodiments of SFC or similar systems having compressible fluid flow streams. *See* A34-39; A41 at 4:56 – A42 at 5:8 (description of the drawings). The field of invention confirms that the invention “relates to a device and method for using a pump as a pressure source, instead of a flow source, in a high-pressure chromatography system, such as supercritical fluid chromatography.” A40 at 1:9-13. The entire background section of the patent focuses exclusively on the problems presented by the prior art SFC systems and distinguishes SFC from HPLC and standard liquid chromatography. *See generally* A40-A41 (columns 1-4). The background section ends by noting that “a need exists for a system that uses a pump as a pressure source *in SFC* without degrading the chromatography results.” A41 at 4:3-5 (emphasis added). The problem is one that is particular to SFC:

The compressibility of the pumping fluid directly effects volumetric flow rate and mass flow rate. These effects are much more noticeable when using compressible fluids, such as CO<sub>2</sub>, in SFC systems than fluids in liquid chromatography . . . . At high pressures, compressibility of solvents is very noticeable and failure to account for compressibility causes technical errors in analysis and separation in SFC.

A42 at 6:6-23.

And, as discussed above, the entire problem to be solved deals with replacing expensive SFC-grade pumps with inexpensive pumps while still

dampening the flow and pressure oscillations caused by compressibility changes that would otherwise cripple the chromatography analysis. *See, e.g.*, A41 at 4:8-42; A42 at 5:22-30; A43 at 7:12-15.

Of course, the claims are not exclusively limited to SFC. But the specification explains why. The specification notes that while SFC systems are designed to operate within the supercritical range of the fluid (typically CO<sub>2</sub>), they can also operate below the critical point (*i.e.*, near supercritical conditions) and still achieve results that are “superior to traditional HPLC.” A40 at 1:44-51. In other words, the patent covers both SFC and near SFC operation. Further, the patent recognizes that another potential application, supercritical fluid extraction (“SFE”), is analogous to SFC and shares a common goal. A40 at 1:52-64. Finally, the patent clarifies that while the patented invention is best suited for SFC or near SFC conditions, it will also benefit related laboratory systems in which “it is necessary to obtain steady flow of liquid at high pressures with high degrees of accuracy of pressure and flow using an imprecise pressure source” and “where separation and/or collection of sample contents into a high-pressure flow stream occurs.” A43 at 8:57-67. The point is that the claimed inventions solve problems common to SFC and related laboratory applications that suffer from similar problems of pumping compressible fluids at high pressures while achieving accurate separation or analysis of a sample. A42 at 5:12-30.

The claims reflect this context. The claims do not apply to just any systems in which any types of fluids flow but rather apply to systems “for using a pump as a pressure source in a flow stream containing a highly compressed gas, compressible liquid, or supercritical fluid.” A703-05 (preambles of Claims 1 and 9). In other words, the claims apply to compressible fluid flow streams, even if the compressible fluid is not strictly supercritical.

Thus, while the claims may not be limited to SFC, neither would they be understood by one of ordinary skill to apply to, say, the heating oil delivery system of Azimov or the gas chromatography system of Shoji, which does not even teach pumping. *See* A317 at ¶ 34 and A319 at ¶¶ 43-46. More specifically, Azimov is not directed to a chromatography system and is thus not concerned at all with ensuring constant, smooth flow to produce accurate and reproducible chromatography analysis. Rather, Azimov is directed to systems for delivering heating fluids, such as oil or natural gas, to furnaces without blowing them up. As such, Azimov discloses “fail-safe” devices to stop flow and thus to prevent the heating fluid from damaging the furnace or other parts of a home heating system. *See* A111 at 1:14-35; A113 at 5:1-5. One of ordinary skill in the art would not have looked to Azimov for a solution for use in SFC or SFC-like chromatography systems because Azimov does not relate to chromatography, let alone SFC, and “Azimov’s shut-down feature would not meet precise SFC pumping

requirements.” A317 at ¶ 34. This evidence of how one of ordinary skill in the art would have viewed the prior art is unrebutted. Aurora never submitted a rebuttal expert opinion.

Likewise, one of ordinary skill would not have looked to Shoji. Shoji is directed to gas chromatography and is not concerned with pumping compressible fluids. Shoji does not even disclose a pump but rather discloses a “bomb” (*i.e.*, a pressurized gas cylinder). The “bomb” does not suffer from nor create the compressibility and flow problems associated with pumps in SFC systems. As such, one of ordinary skill would not have looked to Shoji for solving the pumping problem recognized in the ‘609 patent. A319 at ¶¶ 43-46. Again, this evidence from Dr. Chordia is unrebutted.

Finally, the examiner recognized that Shoji teaches away from the claimed inventions. A68-69, A73-76; A644-45. One of ordinary skill would not have thought to combine Shoji with Azimov and/or the APA. In fact, if the references were combined, the combination would have undermined their intended purposes. Nor did Aurora present any evidence that the combination would render Claims 12 and 13 obvious. Indeed, the Board concluded that the “Requester does not explain how either Azimov or Shoji, or a combination of the two, teaches or suggests these limitations [of Claims 12 and 13].” A31.



## SUMMARY OF ARGUMENT

### **A. This Court Lacks Jurisdiction Because Neither the Patent Owner Nor Third-Party Requester Appealed and Agilent Is Not, and Did Not Become, the Third-Party Requester**

As an initial matter, Agilent's appeal should be dismissed for lack of jurisdiction. This case involves an appeal from a final Patent Trial and Appeal Board decision in an *inter partes* reexamination. The Patent Act provides that only the patent owner and the third-party requester may appeal a Board decision. 35 U.S.C. § 141. The patent owner is Waters. The third-party requester is Aurora. Neither Waters nor Aurora appealed the Board's decision. Agilent is neither the patent owner nor the third-party requester and thus had no right to appeal. Accordingly, Agilent's notice of appeal is, in effect, a nullity.

Agilent is, at best, merely Aurora's privy. A privy has no standing under § 141 (or any other statute) to appeal. Indeed, as Aurora's privy, Agilent is actually barred from appealing or otherwise challenging the patentability of the confirmed claims. Further, Agilent did not become the "third-party requester" merely because it purchased certain assets from Aurora. By statute, the third-party requester is the party, and only the party, actually requesting the reexamination. Agilent did no such thing.

Moreover, Aurora was not swallowed up in a stock purchase or merger. Aurora did not cease to exist such that, hypothetically, Agilent stands in its shoes.

Rather, Aurora continued to exist and stand in its own shoes after the asset purchase transaction and, tellingly, continued to participate in the reexamination. Aurora certainly could have appealed but failed to do so. Because no notice of appeal was filed by a party with standing to appeal, there was, in effect, no notice of appeal. Thus, this Court lacks jurisdiction.

**B. The Board Correctly Construed “Control”**

The Board correctly construed the claim term “control” to mean “to adjust to a requirement” or to “regulate.” This term does not encompass shutting off the system in response to a pressure surge, as in Azimov. Under the broadest reasonable construction standard, the claim term at issue cannot be read in isolation, as Agilent does, but must instead be consistent with the teachings and purpose of the patent. The patent specification makes clear that the purpose of the patent is to solve the problem of pumping compressible fluids, like CO<sub>2</sub>, in SFC or similar systems that require continuous, even, uninterrupted flow through the system in order to provide accurate, reproducible chromatography results. The patent expressly equates control with regulation and uses these terms interchangeably in the specification. *See* A41 at 4:24-42. Indeed, this passage, among others, describes “the invention.” Use of terms like “the invention” or “the present invention” in the specification is like a road sign pointing out the proper route to claim construction.

Thus, while the approach of the patent is to “control” the pressure drop to ensure uninterrupted, even flow of the compressible fluid while dampening the pressure and flow oscillations that would otherwise degrade the SFC analysis, Azimov takes a different approach. Upon a pressure surge, the servo-mechanism of Azimov shuts down the system, stopping flow. There is no indication in the patent, and Agilent has pointed to none, that shows that the inventors were concerned with, or even contemplated, shutting down the SFC system. Their desire, as seen expressly in the patent, is to keep the flow stream moving, not to shut down the system.

**C. Agilent’s Proposed Obviousness Rejection of Claims 12 and 13 Was Never Made In the Reexamination and Thus Was Waived**

The Board did not abuse its discretion or act capriciously but, rather, correctly declined to enter new grounds of rejection against Claims 12 and 13 for two reasons. First, the combination of Azimov plus Shoji or Azimov plus Shoji and the Admitted Prior Art (“APA”) was never proposed against Claims 12 and 13. The Board is not a mind-reader and had no obligation to reject claims based on arguments that were not made or preserved. Further, this argument has also been waived in appeal to this Court because it was never presented below.

Second, even if the argument had not been waived, Agilent has failed to meet its burden of showing that one of ordinary skill in the art would combine Azimov with Shoji and/or the APA to produce the inventions recited in Claims 12

and 13. The problem solved by the '609 patent is how to pump compressible fluids in SFC or similar systems that require precise, continuous flow while avoiding pressure and flow oscillations that would otherwise degrade the chromatography results. In contrast, Azimov does not concern SFC or other chromatography and, at any rate, is concerned with shutting off the flow to protect the system. Azimov also does not concern pumping compressible fluids like CO<sub>2</sub>. Shoji, while directed to a form of chromatography known as gas chromatography, does not concern pumping. In the gas chromatography of Shoji, the gas is released from a canister or "bomb" and is not pumped. Thus, one of ordinary skill would not have looked to Shoji for a solution. Further, Shoji is incompatible with Azimov because Azimov teaches the use of multiple pressure regulators while Shoji seeks to avoid the use of multiple pressure regulators, which are expensive. Neither Azimov nor Shoji discloses a flow stream of CO<sub>2</sub>, and the APA does not help because it teaches that pumping CO<sub>2</sub> is hard and that the solution, if any, is to dynamically adjust the compressibility of the fluid. Azimov and Shoji do not even consider that issue. As such, the proposed prior art combination would not render Claims 12 and 13 obvious.

## **ARGUMENT**

### **I. STANDARD OF REVIEW**

In general, this Court reviews the Board's legal conclusions *de novo* and fact findings for substantial evidence. *Tempo Lighting, Inc. v. Tivoli, LLC*, 742 F.3d 973, 976-77 (Fed. Cir. 2014) (reviewing appeal of *inter partes* reexamination); *In re Chapman*, 595 F.3d 1330, 1336-37 (Fed. Cir. 2010) .

More specifically, and without conceding any facts or waiving any arguments, Waters generally agrees that Agilent has correctly set forth the various standards of review (*e.g.*, *de novo* review for claim construction, etc.). *See* Doc. 42 at 20-21.

### **II. THIS COURT LACKS JURISDICTION OVER AGILENT'S APPEAL**

Agilent bears the burden of proving that this Court has jurisdiction over the appeal. *Abbott Point of Care Inc. v. Epocal, Inc.*, 666 F.3d 1299, 1302 (Fed. Cir. 2012). Despite its burden to establish that it has standing to appeal the Board's decision, however, Agilent fails to articulate any theory under which the alleged facts confer standing.

Agilent relies on 35 U.S.C. § 141 as support for the Court's supposed jurisdiction over this appeal. *See* Brief of Appellant [Doc. 42] at 2. Section 141, however, provides that only a patent owner or third-party requester may appeal a Board decision on an *inter partes* reexamination to this Court:

A patent owner, or a third-party requester in an *inter partes* reexamination proceeding, who is . . . dissatisfied with the final decision in an appeal to the Board of Patent Appeals and Interferences [now the PTAB] under section 134 may appeal the decision only to the United States Court of Appeals for the Federal Circuit.

35 U.S.C. § 141 (pre-AIA version, 2002-2012).<sup>5</sup> The patent owner, Waters, did not appeal. Agilent admits that Aurora requested the reexamination. But Aurora, as the third-party requester, did not appeal either. “[W]hen a statute provides a detailed mechanism for judicial consideration of particular issues at the behest of particular persons, judicial review of those issues at the behest of other persons may be found to be impliedly precluded.” *Pregis Corp. v. Kappos*, 700 F.3d 1348, 1358 (Fed. Cir. 2012) (citation omitted). In the context of § 141, Agilent falls into the category of “other persons” impliedly precluded from appealing because it is neither the patent owner nor the third-party requester. In effect, then, Agilent’s notice of appeal was a nullity. *See, e.g., Vaillancourt v. Becton Dickinson & Co.*, 749 F.3d 1368, 1370 (Fed. Cir. 2014) (party in privity with patent owner could not appeal under § 141 because he was not the patent owner).

Apparently conceding that only patent owners and third-party requesters have standing to appeal to this Court from *inter partes* reexaminations, Agilent

---

<sup>5</sup> As Agilent noted in its brief, “[t]he rules and statutes that govern the conduct of this review are those prior to the amendments attendant [on] the adoption of the America Invents Act.” Doc. 42 at 2, Fn. 1. As such, the cites to the relevant sections of the Patent Act governing *inter partes* reexaminations are the pre-AIA versions, before *inter partes* reexaminations were phased out.

asks this Court to confirm it as a third-party requester. *See* Doc. 42 at, *e.g.*, 17, 21, 24. But Agilent is not, and never was, a third-party requester. As explained below, Agilent does not qualify as the third-party requester under the statutory definition. Nor did Agilent become the third-party requester when it purchased certain assets from Aurora. Mere privity does not guarantee a right to appeal.

**A. Agilent Does Not Meet the Statutory Definition of a Third-Party Requester**

Congress defined a “third-party requester” as a “person requesting *ex parte* reexamination under section 302 or *inter partes* reexamination under section 311 who is not the patent owner.” 35 U.S.C. § 100(e). Agilent admits that Aurora requested the underlying *inter partes* reexamination. Doc. 42 at, *e.g.*, 8 (“A Request for *Inter Partes* reexamination of the ‘609 Patent was filed by Aurora SFC Systems, Inc.”); 22 (“Aurora, the party that filed the reexamination”); 23-24 (referring to “Aurora, the party filing the original request for reexamination”). As the party actually requesting *inter partes* reexamination of the ‘609 patent, Aurora meets the statutory definition of the third-party requester.

Agilent does not claim to have requested the *inter partes* reexamination. Indeed, there is no evidence of record that Agilent has ever requested *inter partes* reexamination of the ‘609 patent (*e.g.*, any documents filed with the USPTO in which Agilent, rather than Aurora, requested reexamination of the ‘609 patent). In other words, Agilent should not be considered the third-party requester because it

has presented no evidence to show that it meets the statutory definition of a third-party requester.<sup>6</sup>

**B. Agilent Does Not Become the Third-Party Requester Simply by Being Aurora's Privy**

Agilent argues that, as “privy of Aurora, the party that filed the reexamination,” Agilent should “enjoy[] the protection extended by the statutes.” *See* Doc. 42 at 22. Agilent fails to identify any particular statutes or any particular protection allegedly extended to privies of the third-party requester by “the statutes.” Indeed, no statute extends protection to a privy of the third-party requester of *inter partes* reexamination. *See generally* 35 U.S.C. §§ 311-318.

In creating *inter partes* reexaminations, Congress recognized a difference between the third-party requester and its privies. But rather than extend protection to privies of the third-party requester, Congress chose instead to protect patent owners from such privies. In particular, Congress estopped privies from requesting or maintaining *inter partes* reexaminations against the same patent. Specifically,

---

<sup>6</sup> Agilent appears to argue that it somehow became the third-party requester merely by participating, allegedly, in the underlying reexamination. But the Patent Act is clear that one does not become a third-party requester in that fashion. Rather, to be a third-party requester, one must actually be the party requesting reexamination. 35 U.S.C. § 100(e). And requesting reexamination is no trivial matter. Congress required that a request for *inter partes* reexamination “be in writing, include the identity of the real party in interest, ... be accompanied by payment of an inter partes reexamination fee . . . and . . . set forth the pertinency and manner of applying cited prior art to every claim for which reexamination is requested.” 35 U.S.C. § 311(b). Agilent did none of those things.



“once an order for inter partes reexamination of a patent has been issued . . . neither the third-party requester nor its privies may file a subsequent request for inter partes reexamination of the patent until an inter partes reexamination certificate is issued . . .” 35 U.S.C. § 317(a). And Congress further provided that, after a final decision on the validity of the patent in either litigation or the reexamination, neither the third-party requester nor its privies may request nor maintain an *inter partes* reexamination of any challenged patent claim on the basis of issues which that were raised, or could have raised, in the litigation or *inter partes* reexamination. 35 U.S.C. § 317(b). Thus, rather than allow privies to participate in an *inter partes* reexamination instituted at the request of the third-party requester, Congress instead limited privies’ opportunity to interfere.

There is no dispute that Aurora requested the underlying *inter partes* reexamination. There is also no dispute that, in response to Aurora’s request, the USPTO instituted the *inter partes* reexamination in May 2012. Agilent argues that it became a privy of Aurora by purchasing assets from Aurora in about August 2012, three months after the reexamination was instituted. *See* Doc. 42 at, *e.g.*, 22. Accordingly, at least by the time it purchased assets from Aurora in August 2012, Agilent has been statutorily barred from requesting *inter partes* reexamination. *See* 35 U.S.C. § 317. And, of course, there is no evidence that Agilent requested *inter partes* reexamination before then. Thus, Agilent should not be considered

the third-party requester because it has presented no evidence showing that it met the statutory definition of a third-party requester.

As prefaced above, this Court holds that “Congress may provide for judicial review of some issues at the behest of particular parties but not others.” *Syntex (U.S.A.) Inc. v. U.S. Patent & Trademark Office*, 882 F.2d 1570, 1573 (Fed. Cir. 1989). Contrary to Agilent’s theory, it “cannot claim standing based on . . . an asserted personal statutorily-created procedural right when Congress intended to grant that plaintiff no such right.” *Id.* (citation omitted). While Congress recognized a difference between third-party requesters and their privies, it only granted third-party requesters the right to appeal a Board decision.

**C. Agilent’s Alleged Participation Below Does Not Entitle It to Appeal the Board’s Decision**

Agilent claims to have “actively pursued invalidation of the ‘609 patent” in the underlying reexamination. Doc 42 at 17. That claim is debatable because, as detailed above at pp. 1-3, *Aurora* was the party requesting reexamination and pursuing invalidation. Agilent never clearly played a role. In any event, whether or not Agilent actively pursued invalidation, Agilent’s alleged participation below does not inherently or legally convey a right to appeal to this Court.

First, there is nothing inherently unfair about barring appeals to this Court by participants in reexaminations. For example, when Congress originally established *inter partes* reexaminations in 1999, Congress allowed the third-party requester to

appeal the examiner's decision to the Board but no further. *See* 35 U.S.C. § 134(c) (1999-2001) ("The third-party requester may not appeal the decision of the Board of Patent Appeals and Interferences"). Thus, Congress determined that—after the opportunity to participate in the *inter partes* reexamination and to appeal to the Board—it was fair to prohibit further appeals to this Court.

Of course, Congress later amended the law to allow third-party requesters to appeal to this Court. But even so, this Court has denied appeals by undisputed participants in *inter partes* reexaminations. For example, in *Vaillancourt v. Becton Dickinson & Co.*, the Court considered whether Vaillancourt, a person who had undisputedly participated in the underlying *inter partes* reexamination and Board appeal as the patent owner, had standing to appeal to this Court. *See Vaillancourt*, 749 F.3d 1368, 1369 (Fed. Cir. 2014). In his notice of appeal to this Court, Vaillancourt identified himself as both the patent owner and appellant. *Id.* But before the appeal to this Court, Vaillancourt had assigned his patent to VLV Associates, Inc., an entity that he solely owned. *Id.* at 1369-70. Despite his participation in the underlying proceedings and his privity to VLV Associates, the Court determined that Vaillancourt could not appeal the Board decision because, at the time of the appeal, he was no longer the actual patent owner. *Id.* at 1370.

Likewise, in *Consumer Watchdog v. Wisconsin Alumni Research Foundation*, 753 F.3d 1258, 1262 (Fed. Cir. 2014), the Court considered whether

Consumer Watchdog, an entity that had participated in the underlying *inter partes* reexamination and Board appeal as the third-party requester, had standing to appeal the Board’s decision to this Court. This Court held that it is not enough that “the *inter partes* reexamination statute allows a third party requester to appeal decisions favorable to patentability.” *Id.* (citing 35 U.S.C. § 315(b)). Rather, federal courts must also account for Article III standing requirements, no matter what the statute provides. *Id.* The Court held that, “although Article III standing is not necessarily a requirement to appear before an administrative agency, once a party seeks review in a federal court, the constitutional requirement that it has standing kicks in.” *Id.* at 1261 (citation and internal quotes omitted). Thus, despite Consumer Watchdog’s participation in the underlying proceedings, the Court determined that it could not appeal the Board decision. *Id.* at 1260, 1263.

In short, Agilent’s theory—that participation in the underlying proceedings somehow confers the participant with standing to appeal a Board decision as a matter of fairness does not hold up.<sup>7</sup>

---

<sup>7</sup> Agilent’s apparent reliance on *University of Pittsburgh v. Cellierix*, App. No. 2013-008103, 2013 WL 6328581 (PTAB 2013), to support an argument that mere participation entitles it to appeal is misplaced. First, that case involves an appeal to the Board. Thus, that case did not apply § 141. Second, the appellant, TiGenix SAU, had actually merged with the third-party requester Cellierix SA such that Cellierix no longer existed as a separate entity. BIOWORLD, *TiGenix Merges with Cellierix in \$79.7M All-Share Deal*, <http://www.bioworld.com/content/tigenix-merges-cellierix-797m-all-share-deal>. That is not the case with the transaction between Aurora and Agilent.

**D. Agilent Did Not Buy a Right to Appeal when It Bought Assets from Aurora**

Finally, Agilent did not acquire a right to appeal merely because it purchased assets from Aurora or is Aurora's alleged successor-in-interest. This is not a case in which one party swallowed up another whole, for example, through a stock purchase or merger. This is not a case in which the third-party requester ceased to exist and a successor stepped into its empty shoes. Rather, the relevant transaction was merely a purchase of certain (so far undisclosed) assets in which, after the transaction, Aurora continued to exist as a live entity. A1228. And, as detailed at pp. 1-3 above, even after the transaction, Aurora continued to participate in the reexamination as the third-party requester. It did not withdraw.

The right to appeal a Board decision is a right granted by statute. *See, e.g., Consumer Watchdog*, 753 F.3d at 1262. Agilent identifies no support for its theory that a private entity may confer statutory rights. And, of course, only Congress may confer statutory rights. *See* U.S. Const., art. I, § 1 (“All legislative powers herein granted shall be vested in a Congress of the United States . . .”); *id.* at § 8 (“The Congress shall have power . . . To make all laws”).

Moreover, the Court has expressly rejected the theory that a party with a right to appeal a Board decision may delegate that right to another. In *Vaillancourt*, the purported appellant “suggest[ed] that § 141 allows a patent owner to delegate to a third party its authority to bring an appeal in this court.”

749 F.3d at 1370. Vaillancourt argued only that “while the unambiguous language of § 141 does not explicitly provide for such delegation, the section does not explicitly bar it either.” *Id.* That, in essence, is Agilent’s argument here. But according to the Court, “[s]tatutory interpretation focuses on the language of the statute itself.” *Id.* at 1369 (citing *United States v. Hohri*, 482 U.S. 64, 68 (1987)). “A statute’s unambiguous language must ordinarily be regarded as conclusive.” *Id.* at 1369 (citation and internal quotes omitted). The Court saw “no reason . . . to extend the procedural right beyond what is clearly set forth in § 141.” *Id.* at 1370. The Court held that Vaillancourt lacked a cause of action and dismissed the appeal because, under the plain wording of § 141, he was not the “patent owner” and was therefore not authorized to file the appeal. *See id.* at 1368-69. The same logic applies to Agilent, which is not the third-party requester.

Finally, Agilent claims to be Aurora’s successor-at-interest by virtue of its asset purchase agreement with Aurora. *See* Doc. 42 at 8-9. But an asset purchase actually undermines Agilent’s argument. “An important reason for structuring an acquisition as an asset transaction is the desire on the part of a buyer to limit its responsibility for liabilities of the seller, particularly unknown or contingent liabilities.” *See* Byron F. Egan, *Asset Acquisitions: Assuming and Avoiding Liabilities*, 116 PENN. ST. L. REV. 913, 920 (2012). It is well recognized that a

potential drawback of an asset purchase is that a government authorization enjoyed by the seller may not be transferrable to the buyer. See *id.*

While attempting to rely on the content of the asset purchase agreement for standing, Agilent did not offer the agreement as evidence. Instead, Agilent relied on an employee's affidavit about certain provisions in the alleged asset purchase agreement in its effort to show that it acquired from Aurora "all rights relating to the reexamination." See Doc. 42 at 8-9 (citing the Tang Declaration). Agilent has never provided the asset purchase agreement itself as evidence of its claims. The undisclosed provisions of the asset purchase agreement may qualify the provisions that Agilent cites or otherwise be useful to challenge Agilent's alleged standing. For example, the affidavit clearly mischaracterizes the nature of the transaction. See, e.g., Doc. 29, Tang Decl. at 21-22, ¶ 5 (characterizing a subsection as transferring "all assets" when the quoted subsection excludes "the Excluded Assets"). Thus, the affidavit of Agilent's employee and the alleged content of the asset purchase agreement should be excluded for failure to satisfy the Best Evidence Rule. See Fed. R. Evid. 1001-1004, 1006-1007; *U.S. v. Alexander*, 326 F.2d 736, 742-43 (4th Cir. 1964).<sup>8</sup>

---

<sup>8</sup> Agilent also attempts to rely on arguments and evidence contained in the motion papers it filed previously. See Doc. 42 at 24, fn. 2. But parties may not incorporate by reference into their briefs arguments made in motion papers. See Fed. Cir. R. 27(g) This Court should consider only those arguments in Agilent's brief and disregard the extrinsic arguments.

### III. “CONTROL” MUST BE READ IN CONTEXT

The problem with Agilent’s proposed construction of “control” is that it is divorced from both the claim wording and the purpose and teaching of the patent. But claim construction, like other forms of textual exegesis, depends on context. As the Supreme Court observed in a recent statutory construction case, disputed terms cannot be understood in isolation:

But oftentimes, the “meaning—or ambiguity—of certain words or phrases may only become evident when placed in context.” . . . So when deciding whether the language is plain, we must read the words “in their context and with a view to their place in the overall statutory scheme.” . . . Our duty, after all, is “to construe statutes, not isolated provisions.”

*King v. Burwell*, No. 14-114, --- S. Ct. ---, 2015 WL 2473448, at \*8 (June 25, 2015) (internal citations omitted); *see also Yates v. United States*, 135 S. Ct. 1074, 1082 (Feb. 25, 2015) (“we rely on the principle of *noscitur a sociis*—a word is known by the company it keeps—to ‘avoid ascribing to one word a meaning so broad that it is inconsistent with its accompanying words, thus giving unintended breadth to the Acts of Congress’”) (citation omitted). In particular, the disputed term should be read to give effect to the purpose of the statute, contract, or—as in this case—the patent at issue.

This Court applies a similar contextual approach when construing disputed claim terms, even under the governing BRC standard. *See Microsoft Corp. v. Proxyconn, Inc.*, No. 2014-1542, 2015 WL 3747257, at \*3 (Fed. Cir. June 16,



2015) (“Even under the broadest reasonable interpretation, the Board’s construction ‘cannot be divorced from the specification and the record evidence’”) (*quoting In re NTP, Inc.*, 654 F.3d 1279, 1288 (Fed. Cir. 2011)); *see also, e.g., In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010) (“The broadest-construction rubric coupled with the term ‘comprising’ does not give the PTO an unfettered license to interpret claims to embrace anything remotely related to the claimed invention. Rather, claims should always be read in light of the specification and teachings in the underlying patent”); *In re Buszard*, 504 F.3d 1364, 1367 (Fed. Cir. 2007) (construction that ignored evidence as to how one of ordinary skill would understand the claim was unreasonably broad). A reasonable construction should align with the purpose of the invention and the problem it solves. *See, e.g., CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 1235 (Fed. Cir. 2005) (“the district court’s construction of ‘automatically’ is consistent with one of the problems the invention sought to redress: avoiding the manual re-entering of the same information for every college application a prospective student desires to complete”); *Synthon Pharms., Inc. v. Sanofi-Aventis U.S. LLC*, Appeal No. 2013-000570, 2013 WL 1310673, at \*7 (PTAB. Mar. 27, 2013) (reversing examiner’s claim rejections and relying on the stated purpose of the invention to help interpret the disputed claim term).

The goal of the invention is not to shut down the chromatography system, as Agilent appears to argue. That would make no sense. If that were the goal, or even a result of the claimed invention, the chromatography system would be useless and would not provide the separation and analysis that chemists and lab technicians desire. The inventors of the '609 patent were not concerned with the risk of exploding boilers or otherwise pulling the plug on dangerous situations (as in Azimov) but rather with smoothing out the pressure and flow ripples that cause technical errors in SFC and similar laboratory applications in which highly compressible fluids are used as solvents at high pressures.

Rather, the goal of the invention is to allow a comparatively inexpensive and imprecise pump “to *move* a compressible fluid flow stream in a *precise flow rate* and pressure signal” while smoothing out and dampening the “large pressure and flow oscillations” that would otherwise degrade SFC results. A42 at 5:22-30 (emphasis added). *See also* A41 at 4:3-5 (“a need exists for a system that uses a pump as a pressure source in SFC *without degrading the chromatography results*”). Indeed, the key factor in ensuring accuracy and reproducibility of the chromatography analysis is maintaining even, uninterrupted flow. A41 at 3:43-44 (“The flow rate should be kept as constant as possible through the separation column”).

Agilent has not pointed to any passage in the specification that unmistakably, or even arguably, equates “control” with shutting off the system. There is no such passage. To the contrary, and as discussed at pp. 15-18 above, the word “control” is always used in the patent in the context of dynamically adjusting (*i.e.*, “regulating”) the pressure drop to ensure constant, smooth flow of the compressible fluid in the mobile phase. *See, e.g.*, A41 at 4:24-42 (“The invention **regulates** the outlet pressure . . .”); *see also, e.g.*, A43 at 7:11-17 . Given that that the word “regulate” is used when describing “the invention,” the claims should be read to be consistent with that use. *See, e.g., Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006) (descriptions of “the invention” or “the present invention” control meaning).<sup>9</sup>

Agilent improperly tries to read Azimov into the claims of the ‘609 patent. *See* Brief of Appellant [Doc. 42] at 30 (“Although the ‘609 Patent does not elaborate in detail on how the described system will react to excess pressure, the prior art patent to Azimov unmistakably teaches that the proper response is to shut

---

<sup>9</sup> Agilent concedes that this passage at 4:24-42 of the ‘609 patent uses “regulates” interchangeably with “controls.” Doc. 42 at 36. This Court recognizes that terms may be used interchangeably and thus the words are considered to be synonymous. *See, e.g., Realsource, Inc. v. Best Buy Co.*, 282 F. App’x 821, 825-26 (Fed. Cir. 2008) (not selected for publication) (“The specification thus reinforces the natural conclusion drawn by the reader of the patent given the prosecution history: the inventor intended ‘property’ and ‘information’ to be interchangeable. Because the two terms strike us as synonymous in the context of the ‘136 patent, determining the scope of ‘ID information [stored on the debit card]’ is a fairly straightforward task”).

off the pump or the flow stream in order to protect the system”). But this argument makes no sense because Azimov and the ‘609 patent are apples and oranges. While the “proper response” in Azimov may be to shut off the flow to protect the system, there is no indication that the inventors of the ‘609 patent were concerned with protecting the lab equipment. As discussed above, their concern was to ensure constant, even pressure and flow so as to dampen the oscillations that would otherwise degrade the chromatography results. *See, e.g.*, A42 at 5:22-30; A43 at 7:44-47 (“The present invention provides precise flow by dampening out a noisy pressure signal and uneven flow so that a pneumatic pump functions as well as an SFC-grade reciprocating pump”).

Similarly, nothing in the claim wording supports Agilent’s construction. The disputed term “to control pressure drop across the restrictor [or orifice]” must be read in the context of the entire claim, particularly in the context of “using a pump as a pressure source.” Both independent claims, Claims 1 and 9, recite a system “for using a pump as a pressure source” and the arrangement of two pressure regulators (*e.g.*, a BPR and FPR, as in Claim 1) and a differential pressure transducer (“DPT”) to “control pressure drop” across “the restrictor” (Claim 1) or “orifice” (Claim 9). *See* A703-04.

The word “using” specifies an ongoing action or present state.<sup>10</sup> Accordingly, the word “control” must be read in the context of a system for using a pump as a pressure source in a flow stream. Azimov’s switch/servo-mechanism combination shuts down operation of the system upon a spike in pressure or flow. A115 at 10:28-31. As the Board perceptively observed, if the flow is shut off, there is no pressure drop to control and thus the claim would make no sense. A18. As such, Azimov does not “control” pressure drops because stopping pump operation (and thus eliminating pressure and flow altogether) cannot be the same as controlling (*i.e.*, regulating) pressure drops. Moreover, the term “pressure drop” (a difference in pressure between two points in a flow stream) cannot be the same as no pressure drop. As a matter of logic, controlling pressure drop must mean that there is a pressure drop to control in the first place. Shutting off the system necessarily eliminates the pressure source and thus leaves nothing to control.

Furthermore, the claimed transducer works with two pressure *regulators* to control the pressure drop across the restrictor. Control must therefore be equated with regulation. Pressure regulators, after all, regulate.

Finally, the Board’s construction of “control” meshes with the understanding of one of ordinary skill. After reading the ‘609 patent, the person of ordinary skill

---

<sup>10</sup> This Court has cited with approval reliance on grammar to help construe claim terms. *See SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 886 (Fed. Cir. 2004) (citing to Strunk & White’s *The Elements of Style* to resolve a claim construction dispute).

would understand “control” to mean adjustment or regulation. *See* A316 ¶¶ 23-25. Dr. Chordia’s expert testimony on this point is un rebutted.

#### **IV. THE BOARD CORRECTLY CONFIRMED CLAIMS 12 AND 13**

##### **A. The Board Did Not Abuse Its Discretion in Declining to Enter New Grounds of Rejection Against Claims 12 and 13**

Contrary to Agilent’s argument that “there was no procedural or substantive basis for the Board to decline to enter a new ground of rejection against Claims 12 and 13 as obvious,” Doc. 42 at 28, there was, in fact, a solid basis to decline to do so: namely, that Agilent (or Aurora) never proposed such rejection. The Board is not a mind-reader. The Board correctly declined to enter new grounds of rejection against Claims 12 and 13 because, as the Board found, the “Requester does not explain how either Azimov or Shoji, or a combination of the two, teaches or suggests [the limitations recited in Claims 12 and 13].” A31. As detailed extensively above at pp. 4-7, Aurora never proposed a rejection of Claims 12 and 13 based on Azimov plus Shoji, let alone Azimov plus Shoji and the APA. Thus, the argument was waived. *See Cisco Sys., Inc. v. Lee*, 557 F. App’x 963, 971 (Fed. Cir. 2014) (“[T]he Board had no obligation to consider claim construction challenges that were not actually raised before it”) (citing 37 C.F.R. § 41.67).

##### **B. This Argument Could Not Have Been Presented to the Board**

In the underlying reexamination, Aurora waived its argument that the Board erred by failing to propose a new ground of rejection against Claims 12 and 13 as

obvious over Azimov plus Shoji and the APA. As seen above at pp. 4-7, Aurora never argued this combination to either the examiner or the Board. Both the Code of Federal Regulations governing PTAB reviews and this Court's precedents require appellants to make arguments below or not have them on appeal.

First, Aurora could not have made the present argument to the Board because it never argued to the examiner that a combination of Azimov plus Shoji and the APA rendered Claims 12 and 13 obvious. Reexamination rules are clear that specific grounds of invalidity must be argued to the examiner or they are waived on appeal to the Board. *See* 37 C.F.R. § 41.67(c)(1)(vi) (“No new ground of rejection can be proposed by a third party requester appellant . . .”); 37 C.F.R. § 41.68(b)(1)(vi) (“No new ground of rejection can be proposed by a requester respondent”); *see also, e.g., Artsana USA, Inc. v. Kolcraft Enterprises, Inc.*, Appeal No. 2013-008706, 2013 WL 6490306, at \*5 (PTAB Dec. 6, 2013) (rejecting proposed invalidity grounds that the Requester failed to raise before the examiner); *Ex parte Frye*, Appeal No. 2009-006013, 2010 WL 889747, at \*4 (BPAI Feb. 26, 2010) (precedential) (“If an appellant fails to present arguments on a particular issue . . . the Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection”); *see also Hyatt v. Dudas*, 551 F.3d 1307, 1313-14 (Fed. Cir. 2008) (arguments not previously made are waived on appeal).

Furthermore, the third-party requester has only limited opportunities to propose grounds for rejection and waives grounds not timely proposed in the right format. For example, in the event that the patent owner introduces new claims (as Waters did on July 9, 2012, when it added Claims 12 and 13, *see* A1175-76), the third-party requester may propose any new grounds of invalidity against those new claims *only* in the immediately following third-party comments (such as the ones that Aurora submitted on August 8, 2012, A874, A917-19). *See* 37 C.F.R. §§ 1.947-1.948. Aurora did not propose the combination of Azimov plus Shoji or Azimov plus Shoji and the APA at that time. A874 and A917-19.

The third-party requester must also present the proposed grounds with specificity and in writing. For example, in appeals to the Board, each ground must be presented under a separate header and be applied to specifically enumerated claims. 37 C.F.R. § 41.67(c)(vi)-(vii); 37 C.F.R. § 41.68(b)(vii). And before the examiner, the third-party requester must provide a detailed explanation of the pertinency and manner of applying the printed prior art for each claim. 37 C.F.R. § 1.915(b)(2)-(3). Neither the examiner nor the Board will consider arguments made out of turn or that do not adhere to the proper procedures and formats. *See* 35 U.S.C. § 314(b)(2); 37 C.F.R. § 1.951. Aurora never followed any of these requirements. For instance, Aurora never marshaled Azimov plus Shoji and the



APA against newly-added Claims 12 and 13 (or any other claims) in its comments of August 8, 2012. *See* A874, A917-19.

This Court has confirmed the Board's approach to waiver, at least in the context of the relevant *ex parte* reexamination rule, 37 C.F.R. § 41.37, which is virtually identical to the *inter partes* reexamination rule, 37 C.F.R. § 41.67. *See In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) (holding arguments waived); *In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1353-54 (Fed. Cir. 2014) (same).

More specifically, in *Enhanced Security Research*, this Court credited the USPTO's interpretation of its rules and held that the appellant's arguments were waived when the appellant failed to "argue the dependent claims under separate subheadings" as required by Rule 41.37. 739 F.3d at 1353-54. The Court also held that the arguments were deficient because the appellant merely recited the claims while stating "that these limitations did not appear in the prior art." *Id.*; *see also In re Lovin*, 652 F.3d at 1357 ("we hold that the Board reasonably interpreted Rule 41.37 to require more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art.").

### **C. Agilent's Argument Is Not Properly Before this Court**

Likewise, because Agilent (and Aurora) failed to proposed the combination of Azimov plus Shoji and the APA to either the examiner or the Board, the

argument has been waived. *See, e.g., In re Baxter Int'l, Inc.*, 678 F.3d 1357, 1362 (Fed. Cir. 2012) (“Absent exceptional circumstances . . . we generally do not consider arguments that the applicant failed to present to the Board”).

Contrary to Agilent’s urging, *Q.I. Press Controls, B.V. v. Lee*, 752 F.3d 1371, 1383 (Fed. Cir. 2014), does not stand for the proposition that a combination of prior art that was never before either the Board or the examiner can be pulled from thin air to invalidate the claims. Unlike Agilent, the requester in *Q.I. Press* actually presented the obviousness combination in question to the examiner. *See id.* at 1384 (“The combination of Sainio and Ross was before the Board on appeal because those references were cited by the examiner to invalidate claims 61–72”). In fact, in *Q.I. Press*, this Court held that an argument not made to the examiner and the Board was waived. *See id.* at 1382. In short, Agilent offers no compelling argument or legal authority on why its argument to this Court of an obviousness combination *never* presented to the examiner or the Board below should be considered now.

#### **D. Claims 12 and 13 Are Not Obvious**

Aurora (or Agilent) never presented evidence in the reexamination that one of ordinary skill would have combined Azimov, Shoji, and the APA to produce the inventions of Claims 12 and 13, even though Aurora certainly had the opportunity

to do so. As such, and as argued above, the argument based on this prior art combination has been waived.

But even if the argument has not been waived, the combination that Agilent now presents to the Court does not render Claims 12 and 13 obvious. Claims 12 and 13 are directed to use of a pump as a pressure source in a high-pressure supercritical fluid chromatography system employing, *inter alia*, pressure regulators and a differential pressure transducer, to regulate flow of a compressible fluid, to wit, CO<sub>2</sub>. *See, e.g.*, A40 at 1:9-12; A41 at 4:18-42. A person of ordinary skill would not combine Azimov with Shoji and the APA.

First, one of ordinary skill would not have combined Azimov with Shoji. Azimov teaches supplying heating oil or natural gas to a furnace or boiler. *See* A112 at 3:41-43; A114 at 8:2-5. In contrast, Shoji teaches the use of a “bomb” or pressurized tank to drive flow through a gas chromatography system. *See* A161 at 1:20-27; *id.* at 1:50-56. Second, Azimov teaches that the pumping mechanism is coupled with multiple pressure regulators. A114 at 7:34-53; A14-15 (Board findings of fact). In contrast, Shoji teaches that “an object of the invention is to provide a gas chromatography, wherein an expensive pressure regulator is not required.” A161 at 2:8-10. Finally, Azimov is directed to pumping (and stopping) the flow of heating oil; Shoji is directed to gas chromatography. Neither Azimov nor Shoji has anything to do with each other or with pumping a compressible fluid,

particularly CO<sub>2</sub>, while accurately controlling its flow, which is a difficult technical task. *See* A40 at 2:51-54. Indeed, one of ordinary skill would not have looked to either reference for a solution to the problem of pumping CO<sub>2</sub> or other compressible fluids in an SFC or similar system. A317 at ¶ 34; A319 at ¶¶ 43-36.

This Court has held that combinations of prior art that produce an “inoperative device” cannot be combined to render a claim obvious. *See McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir. 2001) (“If references taken in combination would produce a ‘seemingly inoperative device,’ we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness.”). Agilent’s proposed combination fails short of this Court’s standard on multiple fronts: Azimov’s use of a pump is incompatible with Shoji’s use of a bomb; Azimov’s intended purpose of stopping the flow of heating oil is incompatible with Shoji’s intended purpose of regulating the flow in gas chromatography; and both Shoji and Azimov would be inoperable for its intended purpose if either were to be used to pump CO<sub>2</sub>.

Further, Shoji teaches away from the ‘609 patent, as the examiner found. A68-69, A73-76; A644-45. And, as the examiner concluded, Shoji “would not have led an ordinary practitioner to the claimed combination of a differential pressure transducer, a back-pressure regulator and a forward-pressure regulator controlling pressure drop across a restrictor.” A82. Accordingly, one of ordinary

skill would not have looked to either Shoji or Azimov to solve the problem addressed in the '609 patent. A317 at ¶¶ 32-34; A319 at ¶¶ 43-46. In particular, Shoji does not concern the problem of pumping compressible fluids and does not even disclose a pump because its gas chromatography system does not use one. A319 at ¶ 43. Azimov concerns *stopping* the flow of the fluid rather than controlling the pressure drop to keep a compressible fluid flowing smoothly so as to ensure proper chromatography results. A317 at ¶ 33; A15 at ¶ 5; A18 at ¶ 16. Given that Shoji and Azimov are non-analogous art and teach away from the '609 patent and from each other, they cannot be combined to render Claims 12 and 13 obvious. *See In re Klein*, 647 F.3d 1343, 1348-51 (Fed. Cir. 2011) (reversing Board, finding prior art related to keeping solid objects separate was not analogous to patent for mixing nectar).

Whether prior art is analogous presents an issue of fact reviewed for substantial evidence. *In re Klein*, 647 F.3d at 1347. There was no evidence, let alone substantial evidence, supporting the Board's finding (at A16, A21-22) that the art was analogous. To the contrary, the only evidence on the subject was from Dr. Chordia, who testified that one of ordinary skill would not have looked to either reference because neither reference concerned pumping compressible fluids in SFC or similar systems. *See* A317 at ¶ 34; A319 at ¶¶ 43-46. The Board, however, failed to credit this testimony. *See* A16 at ¶ 8; A21-22 at ¶ 29. As a

matter of law, the Board erred by failing to credit the un rebutted testimony of the only expert in the case. *See In re Sullivan*, 498 F.3d 1345, 1352-53 (Fed. Cir. 2007) (vacating obviousness rejection because USPTO failed to consider expert testimony that the prior art taught away from the claimed invention).

Finally, neither Shoji nor Azimov discloses a flow stream of CO<sub>2</sub>, and neither Aurora nor Agilent cited evidence to the contrary. *See* A30-31. That's why Agilent only now attempts to rely on the APA for its disclosure of CO<sub>2</sub> flow streams in SFC systems. But the APA teaches that it is hard to pump CO<sub>2</sub> in the controlled, precise way needed for SFC. *See* A42 at 5:64-67. Indeed, a major theme of the "Background" section of the '609 patent is that pumping CO<sub>2</sub> and other compressible fluids in SFC systems poses significant hurdles. *See, e.g.*, A40 at 2:13-28, 2:51-57; A41 at 3:34-42. Further, the APA teaches that the solution is to use dynamic compressibility compensation ("DCC"). *See* A41 at 3:1-10. Yet the '609 patent seeks to avoid the expensive and imperfect DCC. The '609 patent also teaches that the "flow rate should be kept as constant as possible." A41 at 3:43. Agilent gives no reason that one of ordinary skill would want to combine Azimov with the APA given that (a) pumping CO<sub>2</sub> while smoothing out the resulting pressure and flow oscillations is extremely difficult, and (b) Azimov seeks to interrupt flow rather than pump it smoothly and continuously. For its part, Shoji does not address the problem of pumping at all. Neither Azimov nor Shoji

offer a solution to pumping CO<sub>2</sub> without degrading the chromatography results. Thus, there would be no reason to combine these references.

### **CONCLUSION**

For the foregoing reasons, Waters respectfully asks this Court to dismiss the appeal for lack of jurisdiction or, alternatively, affirm the Board's construction of "control" and its decision confirming Claims 3, 5-8, and 12-13, especially given that Agilent's arguments against Claims 12 and 13 were waived.

Dated: July 9, 2015

Respectfully submitted,

/s/ Erik Paul Belt  
ERIK PAUL BELT  
DEBORAH M. VERNON  
KIA LYNN FREEMAN  
MCCARTER & ENGLISH, LLP  
265 Franklin Street  
Boston, MA 02110  
(617) 449-6500 (telephone)  
(617) 607-9200 (fax)  
[ebelt@mccarter.com](mailto:ebelt@mccarter.com)

*Attorneys for Waters Technologies Corp*

### **CERTIFICATE OF SERVICE**

I, Erik Paul Belt, hereby certify that on this 9<sup>th</sup> day of July, 2015, I caused this Brief on Behalf of the Appellee to be filed electronically with the Clerk of the Court using the CM/ECF System, which will send notice of such filing to the following registered CM/ECF users:

John M. Griem, Jr.  
Carter Ledyard & Milburn LLP  
Two Wall Street  
New York, New York 10005  
griem@clm.com

*Counsel for Appellant*

Upon acceptance by the Clerk of the Court of the electronically filed document, six paper copies will be filed with the Court, via Federal Express, within the time provided in the Court's rules.

/s/ Erik Paul Belt  
*Counsel for Appellee*

.



**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME  
LIMITATION, TYPEFACE REQUIREMENTS AND TYPE STYLE  
REQUIREMENTS**

1. This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B).

  x   The brief contains 13,085 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii), or

       The brief uses a monospaced typeface and contains        lines of text, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii).

2. This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6).

  x   The brief has been prepared in a proportionally spaced typeface using MS Word 2010 in a 14 point, times new roman font or

       The brief has been prepared in a monospaced typeface using MS Word 2002 in a        characters per inch                    font.

/s/ Erik Paul Belt  
ERIK PAUL BELT